

of white spot at tip of abdomen, in position of second recurrent, and darker tipped wing.

Ageniella clypeata new species.

Male.—Black, with silvery pubescence, clypeus pale yellowish, vertex slightly rounded, no long hairs, posterior ocelli nearer to eyes than to each other, antennæ rather short; pronotum weakly angulate behind; metanotum low and sloping, with a median smooth line on the basal part, posterior corners with dense white pile; abdomen also sericeous, lower margin of segments pale; legs very long and slender, leg I (including coxæ) pale, other legs dark on femora and tibiæ at least above, hind tarsi darker, spurs white, inner one of hind tibia two thirds of the metatarsus. Wings faintly fumose, tips darker, third cell higher than long, angulate in the middle behind, receiving the second recurrent beyond the middle, this recurrent scarcely curved outward, in both fore wings there is from the juncture of the first recurrent with the second submarginal cell a short projection into the second discoidal cell. Basal veins interstitial. Length, 8.5 mm.

From Chain Bridge, Va., 14 June.

BEEES FROM ECUADOR AND PERU.

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On his recent trip to South America, Professor C. T. Brues collected a very interesting series of bees, which are reported on herewith. I have included also a series collected by Mr. v. Buchwald at Guayaquil, transmitted to me by Mr. J. D. Alfken of Bremen, and a few collected by Professor Townsend in Peru.

Comparatively little has been known of the bees of Ecuador and Peru, so it is not surprising that many of the species are new. Reviewing the collection as a whole, the following points are of interest:

1. The species of the coast region of Ecuador and Peru are mostly distinct from those found elsewhere, though the Brazilian fauna is represented by a few unmodified forms, and a few are identical with species of Central America. Probably, as regards species, there are two rather distinct faunæ, that of Ecuador and adjacent parts of

Columbia, and that of Peru. The Ecuador-Columbia coast region is distinctly more humid than that of Peru.

2. There is, so far as the materials before me show, a total absence of precinctive genera; generically the fauna is nearly the same as that of other parts of tropical South America, but it is interesting to find at Guayaquil the characteristic southern genus *Leptomectria* meeting the northern (Antilles and Eastern U. S.) *Florilegus*.

3. The peculiar Chilian bee-fauna scarcely invades this region at all, yet a very few species, such as *Megachile ecuadoria*, must be derived from the Chilian group. The southern genus *Louchopria* gets as far north as Matucana, Peru.

Xylocopa brasilianorum bruesi new subspecies.

Female.—Larger, length 28 mm. or rather more, anterior wings 23 mm.; abdomen above much more closely punctured. The wings have a fine rosy-purple color, and are very dark.

Habitat.—San Bartolome, Peru, July, 1913 (C. T. Brues). Three females, all alike.

Maidl (Ann. k. k. Nat. Hofm. Wien, 1912, p. 312) remarks at length on the variability of *X. brasilianorum*, and gives a long list of synonyms. Undoubtedly this type presents several different forms, but specimens from any one locality are very uniform, and I believe we have to do with subspecies rather than individual variations.

Xylocopa transitoria Pérez.

Four females from Guayaquil, Ecuador, May-June, 1913 (Brues). Maidl treats this as a synonym of *X. brasilianorum*, but it is certainly distinct by the truncate end of scutellum, and green wings suffused with purple apically. A male from Guayaquil is apparently *X. brasilianorum*, but has very distinct black bands on the hind margins of abdominal segments, the extreme base of anterior tibiae light yellow, and the dark clypeal patch very large.

Females of *X. morio callichlora* Ckll. were also taken at Guayaquil. *X. frontalis viridimicans* Enderlein is a synonym of *callichlora*.

Eulaema bruesi new species.

Female.—Length about 20 mm.; superficially exactly like *E. mussitans* (Fb.), but differing as follows: Third and fifth antennal joints considerably shorter; labrum shorter; face on each side of antennae brilliant violet, below

this dark blue-green; clypeus yellowish-green suffused with coppery; tegulae dark purple-blue; upper part of metathorax suffused with blue; abdomen (except first segment) dorsally with the tegument golden suffused with rosy; wings perhaps a little darker.

Habitat.—Guayaquil, Ecuador, May–June, 1913 (*C. T. Brues*).

A very fine species, related to *E. mussitans*, and also to *E. polychroma* (Mocs.), but quite distinct.

***Bombus robustus* Smith.**

Huascaray, Peru, Sept. 21, 1911, 6,500 ft. (*C. H. T. Townsend*).

This is typical *robustus*, as described by Smith.

***Bombus coccineus* Friese.**

Matucana, Peru, June–July, 1913, 7,300 ft. alt. (*Brues*); Pachacayo, over 12,000 ft. (*Townsend*).

***Bombus funebris* Smith.**

Pachacayo, Peru, over 12,000 ft., March 27 (*C. H. T. Townsend*).

***Melipona mimetica* new species.**

Worker.—Length 10 mm. or a little over, robust; head, thorax and legs black, lower part of clypeus and basal half of hind tibiae obscurely rufous, apical tarsal joints chestnut red; head and thorax above with very pale ochreous hair; sides of face with short white hair; pleura with a large patch of fulvous hair above, white below; tegulae ferruginous; wings reddish; abdomen bright chestnut red, when the segments are extended to the utmost, a basal black line is seen on second to fourth; sides (but not dorsum) of apical half showing black bristles.

Habitat.—Guayaquil, May–June, 1913 (*Brues*).

Extremely close to the Brazilian *M. pseudocentris* Ckll., from which it differs by the black face, the lack of black (or any other) hair on the dorsum of apical part of abdomen, and the coarse black hair fringing the smooth outer face of hind tibia. The color of the legs is also very different, and the inner surface of the hind tibia in *M. mimetica* is clothed with a fine white pruinosity (not always very evident); while the hair on the inner side of the basitarsus is shining orange-golden, varying to more dusky. Eight specimens of *M. mimetica* were collected; the specific name refers to the perfect superficial resemblance to *Centris tarsata* Sm. *M. fuscipes* Friese must be a similar insect, but it is typically with ashy-fuliginous hair, with the

abdominal segments 3 to 6 showing black hair, in the manner of *M. rufiventris*. It is possible (considering the great range given) that *M. fuscipes* was composite, and included (from Peru) the present insect, since Friese says it is "very rarely fulvous-haired."

Trigona frontalis Friese.

Guayaquil (*v. Buchwald*; Alfken coll. 31).

Trigona amalthea (Oliv.).

Guayaquil (*v. Buchwald*; Alfken coll. 30).

Trigona leucogastra new species.

Worker.—Length about $5\frac{1}{2}$ mm., anterior wing 6 mm.; broad and robust, shining black; scape black, reddish only at extreme base; flagellum obscure reddish-brown beneath; mandibles edentate, ferruginous apically; face thinly beset with short silvery hairs; front, vertex, mesothorax and scutellum with coarse black hair, not dense; pleura with black hair above and thin white pruinose pubescence below; tubercles fringed with pale (brownish-white) hair; tegulae piceous; wings hyaline, with bright ferruginous costa and nervures; legs with hair partly pallid and partly black, outer side of middle tibiae with short, shining silvery hairs, under side of hind trochanters and adjacent base of femora with white hair; abdomen short, the apical segments dorsally with thin but distinct white hair-bands, and the venter, except at sides near base, covered with shining silvery white hair. In some specimens the flagellum is quite clear red beneath. The cheeks are white-pruinose.

Habitat.—Guayaquil, May–June, 1913, 17 workers (*Brues*); Guayaquil, 3 workers (*v. Buchwald*; Alfken coll. 29).

In my manuscript table of neotropical *Trigona*, this runs to *T. cressonii* D. T., from which it is easily known by the entirely different color of the wings, and the pale hair on apical part of abdomen. The wings agree with Lepeletier's description of his *T. hyalinata*, but the thorax in that species is not black-haired. Superficially, *T. leucogastra* looks exactly like *T. cupira* Sm., but that has pale face-markings, and lacks the pale abdominal hair-bands. The light hair on under side of abdomen recalls *T. postica* (Latr.), but that differs greatly in other respects.

Megachile pyrrogastra Cockerell.

Male.—Guayaquil, May–June, 1913 (*Brues*). This sex is new; it has the following special characters:

Flagellum slender, red beneath, very slightly widened at end; face densely covered with creamy-white hair; the very thick mandibles with a bright red patch near apex; anterior coxæ with moderately long, strong spines, outer half of coxa ferruginous; anterior trochanters strongly angulate below; anterior femora mainly light reddish, more yellowish on inner face, with three black lines, the apical half on outer side largely black; these femora are also peculiarly formed, angulate beneath basally, then with the upper and lower sides parallel, until toward the apex the lower side is provided with a low keel; anterior tibiæ trigonal, red, with black on margins, the posterior outer margin very broadly black, the anterior outer one only black on basal half; anterior tarsi pale yellowish, greatly modified; first joint boat-shaped, red apically; second with a large black spot at base, and the apex prolonged into a finger-like process; inner margin of boat-shaped process with thick black hairs; hair of posterior fringe white on outer side, black and white within; claws deeply bidentate; middle and hind femora and tibiæ black, marked with red; middle tarsi cream-colored basally, light reddish apically; hind tarsi mainly dark, but outer half of basitarsus cream-color; middle coxæ with slender black spines; abdomen red with the fifth and sixth segments black, keel of sixth segment very broadly emarginate; no conspicuous apical (subventral) armature.

This is such a complicated insect that a complete description of all its peculiarities would fill pages. It differs from the male of *M. pulchra* Sm. (to which it runs in Friese's table) by the mandibles having only an apical red patch, the scape all black, flagellum black above, and the keel of sixth segment of abdomen deeply emarginate.

Megachile philinca Cockerell, variety a.

Guayaquil, May-June, 1913 (*Brucs*).

The two males collected differ from the types in having the pale hair of thorax above white instead of fulvous, and the legs bright red. In the original males of *philinca* the dingy color of the legs is apparently due to immaturity, since the female has them bright ferruginous.

Megachile garleppi Friese.

San Bartolome, Peru, 1 male, July, 1913 (*Brucs*).

This certainly appears to be Friese's species, but it is the sixth segment of the abdomen that is bispinose; Friese says the seventh segment, but probably by a slip of the pen, as he does not mention the sixth at all.

Megachile ecuadoria Friese.

Matucana, Peru, 2 males, June-July, 1913, 7,300 ft. (*Brues*).

The specimens are a little larger than Friese describes, but otherwise agree with the description. As Friese remarks, the insect much resembles *M. pollinosa* Spinola, but the red hair covering apex of abdomen is distinctive.

Cœlioxys haematura new species.

Female.—Length a little over 10 mm.; head black; sides of face and front with broad bands of dense pale ochreous hair; cheeks with white hair, becoming yellowish above; mandibles chestnut red; clypeus with lower margin faintly concave, not emarginate; antennæ black; hair on eyes short; thorax black below, but upper part of pleura largely red, as also the sharply pointed tubercles; mesothorax with anterior half red except in middle, the middle section with small scattered punctures, larger posteriorly, the sides with large partly confluent punctures, very dense in the median sublateral region; scutellum shining and impunctate in middle, with large scattered punctures at sides; a large broad-triangular upwardly directed median tooth on hind margin of scutellum; axillar teeth long and straight, compressed apically; pleura with the usual vertical bands of dense pale hair, and the upper part hairy nearly all over; base of scutellum with a single (not divided in middle) pale ochreous hair band; tegulæ deep ferruginous; wings strongly infuscated, stigma dark ferruginous; legs entirely bright red, anterior coxæ with small tubercles; abdomen bright ferruginous, with broad dorsal black patches on segments 2 to 4, and a round dusky spot on the sixth; hair-bands narrow and entire, ochery-white; punctures small and not dense; last dorsal segment pointed, moderately acute, the apical half strongly keeled; last ventral narrow, extending far beyond dorsal, without evident notches; venter keeled, the fifth segment with excessively minute punctures, its margin fringed with white hair.

Habitat.—Guayaquil, May-June, 1913 (*Brues*).

Very close to *C. azteca* Cresson, differing hardly at all, except in the quite distinct character of the clypeus.

Cœlioxys leucochrysea new species.

Male.—Length about 9 mm.; black, the tegulæ and legs bright ferruginous, the ventral surface of the abdomen dark ferruginous; eyes dark brown, with short hair; face densely covered with pale golden-tinted hair, this extends over front, but just before middle ocellus is a separated, heart-shaped patch; mandibles red with the bidentate apex black, and a spot of light hair at base; cheeks with a broad smooth bevelled space below; antennæ black; mesothorax and scutellum with very large quite close punctures, and a fine median raised line; scutellum very short, with a very minute apical tubercle; axillar teeth well developed, curved; bands in front and behind mesothorax, and a spot

behind each tegula, of dense pale orange hair; dense hair-band on post-scutellum ochery-white, in contrast; pleura with the usual two white hair-bands, the upper part not hairy between the bands; wings strongly infuscated, stigma dark ferruginous; anterior coxæ with short stout black spines; abdomen very distinctly but not very densely punctured; hair-bands feeble, linear, white, that bordering basin of first segment pale ochreous; apical segment 6-spined, the lower apical teeth slender.

Habitat.—Guayaquil, May–June, 1913 (*Brues*).

Very similar to *C. edentata* Schrottky, but much smaller. It seems also to resemble *C. remissa* Holmbg., of which the male is unknown. In my table of males in *Canad. Entom.*, June, 1912, it runs to *C. sayi*, which is entirely different in the ornamentation of the thorax.

***Cælioxys rufibasis* new species.**

Male.—Length 9 mm.; black, with the first abdominal segment entirely, the venter of abdomen, the tegulæ and legs clear ferruginous; mandibles red with the apex broadly black; face with yellowish-white hair; antennæ black; eyes with short hair; bevelled space on cheeks below covered with white hair (not naked as in *C. leucochrysea*); mesothorax and scutellum shining, with scattered large punctures, middle of scutellum impunctate, the margin very broadly angulate; hair of occiput pure white, but anterior band of dense hair on thorax, which is widely interrupted in middle, ochrey white; two large ochery-white patches of hair in scutello-mesothoracic suture; a dense patch of light hair behind each tegula; axillar teeth rather short; wings dusky apically; anterior coxæ well spined; abdomen almost impunctate in middle, except at base; hair-bands pure white, on third and fourth segments very broadly interrupted in middle, the apical bands beyond first segment only at sides; apical segment 6-dentate, lower apical teeth slender; venter sparsely punctured.

Habitat.—Guayaquil, May–June, 1913 (*Brues*).

In my table of males in *Canad. Entom.*, June, 1912, this runs to *C. sayi*, which it does not resemble. It is extremely close to the Brazilian *C. ardescens* Kll., differing by the shorter, shining vertex; the paler thoracic ornaments; the contrasting pale ferruginous first abdominal segment; the white hair of occiput, and other small details. Thus, although they look distinct enough, the technical differences between *ardescens* and *rufibasis* are slight, suggesting the possibility that they should be treated as subspecies of a single species. *C. rufibasis* also resembles *C. assumptionis* Schrottky.

***Cælioxys tumorifera* new species.**

Male.—Length a little over 10 mm.; black, the tegulæ, legs and mandibles (except at apex) ferruginous; abdomen beneath dark ferruginous, more or

less stained with blackish, but above wholly black, except a red stain at extreme sides of segments; hair of head and thorax dull white, stained with ochreous dorsally; face densely covered with ochery-white hair; cheeks beneath with no hairless space; tubercles red, fringed with white hair; anterior band of thorax very narrow, confined to less than the lateral third of mesothoracic margin; base of scutellum with two large ochery-white hair spots, far apart; pleura sparsely hairy above between the bands; eyes brown, with rather short hair; antennæ black; no hair-patch in front of middle ocellus; vertex behind ocelli with only about three punctures, but these large; mesothorax impunctate in middle from front to hind margin, at sides with many but not dense punctures, of different sizes; anterior middle of mesothorax swollen; scutellum impunctate in middle, with large scattered punctures at sides; hind margin strongly but obtusely angulate, turned upwards; axillar teeth well developed, their button-like ends slightly turned inwards; wings strongly dusky, stigma and nervures piceous; anterior coxæ without distinct spines; abdomen shining, sparsely punctured in middle, with a distinct dorsal carina as well as a ventral one; hair-bands of abdomen dull white, only continuous on first segment; basal transversely elongate hair-patches on segments 3 to 5, but not on 2; apical segment 7-toothed, the median tooth or spine long and sharp.

Habitat.—San Bartolome, Peru, July, 1913 (*Brucs*).

Closely related to *C. pyrata* Holmbg. (*carinata* Sm.), but distinct by the character of the mesothorax.

The following key will be useful for the separation of the above species of *Coeliorys*:

- | | |
|---|---------------------------|
| Scutellum red, with a large median process..... | <i>hamatura</i> Ckll. |
| Scutellum black, without such a process..... | 1 |
| 1. Scutellum strongly angulate in middle, the apical region smooth; hair at base of scutellum forming two large widely separated spots. | |
| | <i>tumorifera</i> Ckll. |
| Scutellum not strongly angulate in middle; hair at base not in two widely separated spots | 2 |
| 2. Scutellum short, strongly punctured all over; first abdominal segment above black | <i>leucochrysea</i> Ckll. |
| Scutellum longer, subangulate, smooth in middle; first abdominal segment above light red | <i>rufibasis</i> Ckll. |

Hypanthidium ecuadorium (Friese).

Guayaquil, May-June, 1913, four (*Brucs*).

Anthidium 22-punctatum Friese.

Guayaquil, May-June, 1913, 1 male, 2 females (*Brucs*).

***Anthidium matucanense* new species.**

Male.—Length about 12 mm.; black, with long hair; clypeus, cuneiform marks filling space between clypeus and eye, greater part of outer face of mandibles, and small spot above each eye pale yellow (primrose yellow); antennæ black, flagellum very obscurely reddish beneath; thorax and legs wholly without light tegumentary markings; mesothorax very densely punctured; tegulæ black; wings dilute fuliginous; hair of head mainly white (long and snow-white on clypeus), but strongly mixed with black on front, cheeks anteriorly and above, and vertex, all black in region of ocelli; hair of thorax greyish-white mixed with longer black hairs, on ventral surface wholly pale; hair of abdomen greyish-white at base, but largely mixed with black on second segment, and beyond that black; femora with black hair; anterior and middle tibiæ with black hair on outer side, and long shining white hair behind; hind tibiæ black-haired, with short dark brown hair on inner side and a patch of appressed white hair at apex above; tarsi with white hair on outer side and dark reddish on inner; first five abdominal segments each with four pale yellow spots, sixth with two spots, apex without spots; lateral spots on first three segments large, more or less excavated on inner side, those on fifth reduced to minute dots; apex tridentate, the middle tooth slender, the lateral ones taking the form of broad lobes, with convex outer margins.

Habitat.—Matucana, Peru, June–July, 1913 (*Brues*).

Very close to *A. garleppi* Schrottky, from Apurimac. Matucana is about 50 miles inland from Lima; Apurimac is about 250 miles southeast from Matucana, on the other side of the mountains. It is possible that the species now described should be regarded as a subspecies of *garleppi*, but it differs in the abundant black hair. These insects belong to typical *Anthidium*.

***Triepeolus megadelphus* new species.**

Male.—Length a little over 11 mm.; black, mandibles dark red except at apex, antennæ black; legs bright ferruginous, middle tibiæ with a blackish stain on outer side, greater part of hind tibiæ blackish, hind femora black beneath except at base and apex, and largely black at sides; tubercles and tegulæ bright ferruginous; wings dilute fuscous; hair-patches of body cream-color, mesothorax with two straight bars, not swollen at end; abdomen with interrupted bands, entire or almost so on fifth and sixth segments, black area on first segment acutely angulate at sides; fringes on fourth and fifth ventral segments creamy white. Clypeus densely rugoso-punctate; pleura closely and strongly punctured, its lower part bare or almost, its upper part with pale greyish hair, in the middle of which is a bare space; spurs rufopiceous.

Habitat.—Guayaquil, May–June, 1913 (*Brues*).

Very close to *T. buchwaldi* (Friese), and marked in a similar manner, but larger, the markings much paler (less yellow), the head

much broader, the bare part of pleura much larger, the band on second abdominal segment more widely interrupted, etc. Among the North American species it resembles *T. sublunatus* Ckll. as closely as any.

Ceratina triangulifera new species.

Female.—Length about 9 mm.; bright peacock green, with slight golden tints on metathorax, and bases of second and third abdominal segments, except at sides, dark, with purple tints; no lateral face-marks; clypeus with a large white apical triangular area, which is continued on each side as a narrow stripe; labrum black; mandibles black, with a green spot at base; flagellum with a very obscure testaceous tint beneath; face and front densely and coarsely punctured; cheeks with large punctures, except the upper part behind, which is smooth and impunctate; mesothorax strongly punctured, with a smooth discal area; tubercles green; tegulae dull rufotestaceous; wings reddish-hyaline; coxae, and hind femora and trochanters in front, green, legs otherwise piceous, but the anterior knees, and stripe on anterior tibiae, white; abdomen well punctured, rugose apically as usual.

Habitat.—Guayaquil (*v. Buchwald*; Alfken coll. 28).

A distinct species, resembling *C. viridula* Sm., but that has green legs. In H. S. Smith's key (Trans. Am. Ent. Soc., 1907, p. 119) it runs out at 19. In Schrottky's key (Zeits. Hym. Dipt., 1907, p. 480) it runs nearest to *C. oxalidis*, which it does not resemble. The general appearance is that of *C. lacta* Spin., which is however much larger, and otherwise different.

Centris nitida geminata new subspecies.

Female.—Length about 13 mm.; anterior wing 10 mm.; black, the thorax above with dense canary-yellow hair, which extends also down the sides, but gives way to white ventrally; head broad, eyes dark brown; flagellum ferruginous beneath, except at base and apex; face-marks light yellow, as follows: lateral marks very narrow, ending in a sharp point above at about level of antennae; clypeus with two very large oblique yellow patches, separated by a dark vertical band in middle; labrum and greater part of mandibles very pale yellow; hair of cheeks white below, but above and on occiput yellow; hair of vertex black, yellow between ocelli; hair of front yellow, black at extreme sides; clypeus shining, with rather small punctures, flattened in middle, with a short rudimentary keel; scutellum shining with well-separated punctures; tegulae pale ferruginous; wings strongly suffused with brown, nervures dark; legs black, anterior tarsi red at apex; anterior and middle femora and tibiae with white hair behind; middle tibiae short and thick, with short black hair in front; front tarsi with ferruginous hair on inner side, and whitish (strongly plumose) on outer; middle tarsi with black hair, the basitarsus also with long

brown hair behind; middle basitarsi on inner side with a long hollowed (boat-shaped) structure, which is conspicuously transversely striated; hind femora with white and brown hair; hind tibiae with a very large black scopa, which also covers the basitarsus; abdomen shining black; first segment with much yellowish-white hair, extending right across; second and third with very scanty short black hair; fourth with much black hair, and a little pale at apex laterally; apex with red hair in middle and white at sides.

Habitat.—Guayaquil, May–June, 1913 (*Brues*).

C. nitida Smith was described from Honduras, and according to Smith's brief description differs from *geminata* in the two basal joints of flagellum wholly black (second, and apex of first, red beneath in *geminata*), middle and hind legs with only black hair, apex of abdomen with only fusco-ferruginous hair. Also, *C. nitida* is said to have white tegulae. *C. confinis* Pérez is evidently very close to *C. nitida*, but is not *geminata*. In the Argentine the same group is represented by *C. nigriventris* Burmeister. I suppose *geminata* to be a subspecies of *nitida*, but it remains to be determined whether Smith's species has the peculiar structural characters observed in *geminata*.

A feature of the venation deserves notice. In *C. nitida geminata* the hind wings have the median cell obliquely truncate at end, and the transversomedial nervure with its upper end vertical, forming two right angles. In *C. rhodopus* Ckll. the hind wings have the median cell obtusely pointed at end (the free end of cubital nervure lacking) and the transversomedial with its upper end oblique.

Melitoma euglossoides Lep. & Serv.

Guayaquil, May–June, 1913, 18 males (*Brues*); Guayaquil, 2 males, 2 females (*v. Buchwald*; Alfken 16).

All these have the scape red, and belong to the South American race described by Smith as *fulvifrons*. The northern race (Guatemala City, *Rodriguez*; Quirigua, Guatemala, *W. P. Cockerell*; Rio Nautla, Mexico, *Townsend*; Comal Co., Texas) has the scape black, and must be called *M. euglossoides marginella* (*Cresson*).

Xenoglossa citrullina Cockerell.

Guayaquil, May–June, 1913 (*Brues*). One male.

Previously known only from Peru.

Florilegus pavoninus new species.

Female.—Length about 11 mm., robust, black, the hind tarsi ferruginous apically, the abdomen with strong green and crimson tints; mandibles with a

broad orange streak; clypeus very strongly and densely punctured, and with a median ridge; malar space linear but present; flagellum, except the apical and the two basal joints, ferruginous beneath; face, cheeks and sides of thorax with greyish-white hair; hair of vertex, band across mesothorax and posterior middle of same, scutellum, large tuft on front of tubercles, and ventral surface of thorax, all black; other hair on head and thorax above brownish-white; mesothorax shining, well punctured, posterior middle impunctate; scutellum with the side only very sparsely and feebly punctured; tegulæ dark, with reddish-brown margin; wings dilute smoky, nervures dark; outer side of third s. m. strongly angled; upper apical side of marginal cell evenly curved; hair of legs mainly shining white, but ferruginous on inner side of tarsi; anterior tibiæ with a small, and middle ones with a large, black patch on outer side; hair at base of hind tibiæ above dark fuscous; spurs clear ferruginous; abdomen with loose brownish-white hair at base; second segment with a basal band of bright orange-fulvous tomentum, greatly broadening at sides; third with a very broad band of the same color, and fourth covered with the same except a subquadrate apicomedian patch; fifth segment with the hair in middle sooty-black, at sides cream-color; sides of venter with conspicuous white hair. Maxillary palpi 5-jointed, the joints measuring in microns: (1) 160, (2) 120, (3) 96, (4) 96, (5) 112. Labial palpi with joints measuring (1) 1360, (2) 640, (3) 144, (4) 120. Paraglossæ slender, extending as far as labial palpi.

Male.—Length 9–10 mm.; hair of head and thorax pale, greyish-white to pale fulvous, without black; antennæ about $8\frac{1}{2}$ mm., flagellum ferruginous beneath, the last two joints wholly black; clypeus lemon yellow, strongly punctured; labrum black, sometimes with a yellow spot; base of mandibles wholly black; hair on outer side of middle and hind legs pure white, bright orange-fulvous on inner side of hind tarsi; abdominal bands greyish-white, the other parts of abdomen with coarse black hair.

Habitat.—Guayaquil, Ecuador, May–June, 1913, 15 females, 3 males (*Brues*); Guayaquil, 2 females, 4 males (*v. Buchwald*; Alfken coll. 15).

The type is a female. This is the first South American *Florilegus*, unless *Tetralonia festiva* Sm., from Pará, should be referred to that genus. *T. festiva* (female) differs from *F. pavoninus* by the aeneous (not pure black) tint of thorax above, the pale fulvotestaceous tegulæ, the ferruginous nervures, etc. The following key will serve to distinguish the males of *Florilegus*:

- | | |
|--|---------------------------|
| Middle and hind legs ferruginous (Cuba)..... | <i>lanieri</i> (Guér.). |
| Legs black | 1 |
| 1. Larger; labrum nearly all yellow (U. S.) | <i>condigna</i> (Cress.). |
| Smaller; labrum black, or with a yellow spot (Ecuador) ... | <i>pavoninus</i> Ckll. |

The female of *F. condigna* is much less like *F. pavoninus*, the abdominal bands being creamy-white or greyish-white.

Florilegus purpurascens new species.

Female.—Length about 11 mm., very robust, black, the hind tarsi dull ferruginous apically, the abdomen with strong purple and green tints on the first three segments, and the hind margins of these segments broadly pellucid testaceous; mandibles simple, with an orange subapical mark, but base wholly black; head very broad; eyes greenish; face, labrum, cheeks and occiput with greyish-white hair, but vertex with black; flagellum, except the first two joints, ferruginous beneath; clypeus brilliantly shining, strongly punctured, with a median ridge; mesothorax and scutellum shining, the mesothorax with rather weak punctures, the scutellum with extremely minute weak punctures; hair of thorax black, except a very narrow white fringe along upper border of prothorax, and a large and dense fringe round hind border of scutellum, thence extending over metathorax, all of which is clear fulvous; tegulae black with slight reddish margins; wings dilute fuliginous; outer side of third s. m. very strongly angled; hair of legs much as in *F. pavoninus*, but that on inner side of hind tarsi and apical part of tibiae is black, while the black patch on outer side of middle tibiae covers most of the surface; hind spurs black, red at end; abdominal banding of the same type as that of *F. pavoninus*, but the bands are very pale fulvous, that at base of second segment rudimentary, while the black (black haired) area on fourth extends from base to apex, and occupies nearly the middle third; fifth segment with sooty-black hair, white at sides; second and third segments each with a round patch of creamy-white hair at each extreme side. Maxillary palpi 5-jointed, the joints measuring as follows in microns: (1) 160, (2) 144, (3) 72, (4) 64, (5) 88. Labial palpi with joints measuring (1) 1200, (2) 856, (3) 144, (4) 96. Paraglossae slender, extending as far as labial palpi. Blade of maxilla 768 μ across at broadest part, the hyaline area 192 μ wide.

Habitat.—Guayaquil, May–June, 1913 (*Brucs*), 3 females.

Easily known by the black hair of pleura, and other characters. The abdominal bands vary to white, and the hair on hind part of thorax may be creamy-white.

Tetralonia melectura new species.

Male.—Length about 11 mm., black, antennae with the very long flagellum dull ferruginous beneath; clypeus strongly punctured, pale yellow; labrum black with a very large pale yellow patch; mandibles with apical half orange on outer side, but base entirely black; eyes very prominent; hair of face, cheeks and front white, but of top of head black; mesothorax with a broad band of greyish-white hair in front, extending down in front of tubercles at sides, but hair of thorax otherwise black; mesothorax shining, with scattered punctures; scutellum depressed in middle; tegulae black; wings fuliginous, with black nervures, second s. m. small; legs with mainly black hairs, but anterior tarsi with fulvous, ferruginous on inner side, middle and hind tarsi with dark ferruginous on inner side; abdomen with black hair, except white

patches on sides of third to fifth segments, spots only on third; short bands on the others. Maxillary palpi bristly, 6-jointed, the joints measuring as follows in microns: (1) 208, (2) 176, (3) 192, (4) 112, (5) 96, (6) 112. Labial palpi with joints measuring: (1) 1280, (2) 640, (3) 120, (4) 128. Paraglossæ long and slender.

Habitat.—Guayaquil (*v. Buchwald*; Alfken coll. 14).

A very distinct species, superficially rather like *T. zebra* Friese. The ornamentation of the abdomen recalls that of *T. melectoides* Smith, from Villa Nova on the Amazon, but that has hyaline wings and various other distinctive characters.

I will take this occasion to note that *Tetralonia pygialis* Buys., from Venezuela, evidently belongs to *Thygater*.

Melisodes ecuadoria Bertoni & Schrottky.

This species, found at Guayaquil, was named by Friese in manuscript, and published with only a few words of description by Bertoni and Schrottky in 1910. Only the female was known; but the male before me, from Guayaquil, May–June, 1913 (*Brues*), has the characters to be expected in the species, and being from the same locality, is presumably identical. The maxillary palpi agree sufficiently with the description and figure of Bertoni and Schrottky.

Male.—Black, abdomen with metallic tints; clypeus lemon yellow, with a black spot on each side; labrum and large patch on base of mandibles cream-color; eyes black; hair of head and thorax ferruginous, paler beneath, black on posterior middle of mesothorax and on scutellum; antennæ very long, flagellum clear ferruginous beneath; tegulæ ferruginous; wings dusky; nervures dark reddish; second s. m. large; upper apical side of marginal cell angulate, though obtusely, not evenly rounded as in *Florilegus pavoninus*; tarsi, anterior tibiæ in front, and the other tibiæ at apex, ferruginous; hind tibiæ with black hair on outer side; abdominal segments with broad basal fulvous hair-bands, a little black hair at sides of apical plate. Maxillary palpi 4-jointed; first joint large and stout, the others measuring in microns about (2) 160, (3) 152, (4) 80. Hyaline area of maxillary blade transversely striated.

Leptometria pacifica new species.

Male.—Length about 9 mm.; black, with the clypeus, labrum, and large patch at base of mandibles light yellow; rest of mandibles dark reddish; antennæ long, the flagellum dark fuscous above, and pale reddish-testaceous beneath, except at base; tarsi and apices of tibiæ obscure rufotestaceous; hair of head, thorax and legs abundant, pale ochreous; abdomen densely covered with appressed warm ochreous hair; vertex shining; mesothorax and scu-

tellum shining, with strong well-separated punctures; metathorax basally with strong punctures like those on scutellum, but a triangular area beyond this shining and impunctate; tegulæ fuscous in middle, testaceous at sides; wings dusky, nervures sepia; b. n. meeting t. m.; second s. m. extremely broad, receiving first r. n. at about the beginning of its last third; hind wings with venation normal for the genus; hind basitarsi ordinary, not toothed; abdomen with fine distinct punctures.

Female.—More robust; no light face-marks; clypeus strongly punctured; labrum with long ochreous hair; antennæ short, flagellum clear fulvous beneath except at base, scopa on hind tibiæ and tarsi long and loose, strongly plumose, pale ochreous; hair on inner side of hind basitarsi ferruginous.

Habitat.—Guayaquil, one of each sex, the male the type (*v. Buchwald*; Alfken coll. 18); Guayaquil, 1 female, May–June, 1913 (Brues).

Closely related to *L. pereyra* Holmbg., but the male differs by the longer third antennal joint, the darker tegulæ, the redder hair of abdomen, the dark tibiæ, etc.

CHALEPOGENUS Holmberg.

Tetrapedia, as generally understood, is certainly composite. *T. diversipes* Klug, the type of the genus, has the first recurrent nervure joining the second s. m. before the middle, and the hind spur long pectinate. *T. plumipes* Smith, though very different in color, has the same structural characters. There exists, however, a group of species with simple hind spur, and the first r. n. joining the second s. m. near its end. In *Psyche*, 1912, p. 57, I described a species of this latter group under *Tapinotaspis*, remarking that it was certainly not congeneric with the type of *Tetrapedia*, but could only go in *Tapinotaspis* if we altered the definition of that genus. Upon further investigation, I conclude that the proper name for insects of this type is *Chalepogenus*, the type of which is *C. muelleri* (*Tetrapedia muelleri* Friese; *Chalepogenus incertus* Holmbg.). *Desmotetrapedia* Schrottky, 1909, having the same type, is strictly congeneric. My species described in the place just cited will stand as *Chalepogenus heathi* (Ckll.). The same genus extends into Central America, *Chalepogenus moestus* (*Tetrapedia moesta* Cresson) being a typical representative. Other Central American species are *C. calcarata* (*Tetrapedia calcarata* Cress.) and *C. mayarum* (*Tetrapedia mayarum* Ckll.).

Chalepogenus buchwaldi new species.

Female.—Length nearly 7 mm.; black, the wings reddish fuliginous, slightly paler but not at all whitened apically; hair of labrum and sides of face dull

white; cheeks with appressed white hair; vertex with extremely scanty black hair; scape red in front, fuscous behind, except at base; flagellum short, fuscous, rufotestaceous beneath; mesothorax dull from a very fine dark pruinose pilosity; scutellum with short erect black hairs; legs rufopiceous, hind legs redder behind; hair of legs black, except the large brush on outer side of hind basitarsi, which is creamy white, dark fuscous at apex.

Habitat.—Guayaquil (*v. Buchwald*; Alfken coll. 26).

Almost exactly like *C. moestus* (Cress.), but easily known by the white hair on outer side of hind basitarsi, and the largely red scape. Both have the anterior basitarsi broadened and modified.

Tetrapedia alfkeni new species.

Female.—Length a little over 7 mm.; black, the wings dark fuliginous, not whitened apically; hair of face and cheeks white, of vertex, thorax, abdomen and legs black, except that the hind tibiae have long white hairs on inner side; tongue golden; clypeus shining, sparsely punctured; scape bright chestnut red, fuscous in middle; flagellum dull reddish beneath, except at base; mesothorax shining, strongly and rather closely punctured; first r. n. joining second s. m. before middle; hind spur very long pectinate; abdomen shining black, beneath with long black hair.

Habitat.—Guayaquil, 2 females (*v. Buchwald*; Alfken coll. 27); Guayaquil, May–June, 1913 (*Brues*).

Nearly the same as *T. maura* Cresson, but the mesothorax is strongly and rather closely punctured, and the hind tibiae have no pale hair at apex on outer side. Both have a stout tooth at base of anterior basitarsi.

Exomalopsis zexmeniaë Cockerell.

Guayaquil, 2 females, 1 male (*v. Buchwald*; Alfken coll. 25); San Bartolome, Peru, July, 1913, 1 male (*Brues*).

The male, not before known, is almost exactly like that of *E. penelope* Ckll., but has the tegulae very dark rufous, instead of amber color as in *penelope*. The female is readily known from *penelope* by the scutellum having black hair and the scopa of hind tarsi being wholly black-haired behind. The female is almost identical with *E. paraguayensis manni* Ckll., from Natal, Brazil; but *manni* has a shorter clypeus, and the scutellum has white hair along its hind border. The type of *manni* had the abdominal segments extended, when contracted they would appear as in *zexmeniaë*.

Undoubtedly these insects belong to *E. globosa* (Fabricius), as

understood by Friese and Ducke. *E. globosa* was very briefly described by Fabricius, and came from the West Indies; Friese examined specimens from Porto Rico and St. Thomas. Friese's description does not quite accord with *zcxmenia*, and I suspect that the true *globosa* is confined to the West Indies. The single female from Columbia, cited by Friese, was very likely *E. zcxmenia*.

According to Ducke, *E. analis* Spinola (female, Pará), *E. villipes* Sm. (female, Brazil), *E. tarsata* Sm. (female, Santarem) and *E. artifex* Sm. (male, female, Pará) are all synonyms of *E. globosa*. The descriptions do not altogether support this opinion, but they are not very detailed. *E. artifex* differs from *E. zcxmenia* in the female by the dense pale fulvous pubescence on the scutellum, and in the male by the rufotestaceous labrum (black in *zcxmenia*). There is no mention of any dark hair on the thorax above in *analis* or *villipes*. In *villipes* the mandibles are ferruginous; in *zcxmenia* and *manni* they have only a red spot. The descriptions of the legs of *villipes* and *tarsata*, if correct, do not agree with *zcxmenia* or *manni*. I therefore conclude that the relationships of all these species or races need further investigation; but it seems not improbable that *manni* is the same as *tarsata*, and *artifex* a synonym of *analis*. Furthermore, it is unlikely that *manni* and *zcxmenia* are more than races of a single species.

Exomalopsis bruesi new species.

Female.—Length about 7 mm.; broad, robust, black; mandibles dark ferruginous, with the base black; flagellum dull rufotestaceous beneath except at base; small joints of anterior and middle tarsi, and hind tarsi entirely clear ferruginous; tegulae black; wings dusky hyaline, the apical margin darker, stigma and nervures light ferruginous; clypeus shining, not densely punctured; hair of head and thorax mainly pale ochreous above (including dense bands at sides of face) and white below, but black on disc of mesothorax posteriorly, and on disc of scutellum; a slight fringe of pale hair along hind border of scutellum, and a tuft of ochreous hair on postscutellum; hair of legs mostly white, but a little fuscous on outer side of anterior tibiae, a slaty or black patch covering nearly all of outer side of hind tibiae, and the large scopa of hind tibiae and tarsi longitudinally tricolored, creamy white in front, ferruginous on inner side and black behind; spurs pallid; first two abdominal segments shining black, the first with a tapering pale fulvous hair-patch on each side, the second with a pair of large oblique orange-fulvous patches; remaining segments densely covered with orange-fulvous hair, but long white hair visible at extreme sides subventrally.

Habitat.—San Bartolome, Peru (type locality), 2 females, July, 1913 (*Brues*); Guayaquil, May–June, 1913, 2 females (*Brues*).

Another member of the *E. globosa* group, but quite distinct by the character and colors of the pubescence on hind legs and abdomen.

For ready reference, I give a table to separate the small Anthophorid bees described above:

| | |
|--|-------------------------------------|
| Hair of thorax black | 1 |
| Hair of thorax at least partly pale | 2 |
| 1. Mesothorax shining, strongly punctured | <i>Tetrapedia alfkeni</i> Ckll. |
| Mesothorax appearing dull, without evident punctures. | |
| | <i>Chalepogenus buchwaldi</i> Ckll. |
| 2. Females | 3 |
| Males | 5 |
| 3. Hind tarsi without black hair; abdomen mainly covered with orange hair. | |
| | <i>Leptometria pacifica</i> Ckll. |
| Hind tarsi with much black hair | 4 |
| 4. Hind tibiae without black hair on outer side..... | <i>Exomalopsis zexmenia</i> Ckll. |
| Hind tibiae with black hair on outer side..... | <i>Exomalopsis bruesi</i> Ckll. |
| 5. Clypeus yellow | <i>Leptometria pacifica</i> Ckll. |
| Clypeus black; tarsi red | <i>Exomalopsis zexmenia</i> Ckll. |

Agapostemon nasutus Smith.

San Bartolome, Peru, July, 1913, 1 male (*Brues*).

Augochlora binghami Cockerell.

Guayaquil, May–June, 1913, 1 female (*Brues*); Guayaquil, a very purple female (*v. Buchwald*; Alfken coll. 21).

In the absence of males, the reference to *A. binghami* is perhaps a little uncertain, but the purple tints and prominent lateral angles of prothorax agree with those of *A. binghami* from Guatemala.

Augochlora metallica (Fabricius).

Guayaquil, 3 females (*v. Buchwald*; Alfken coll., 23); Guayaquil, May–June, 1913, 1 female (*Brues*).

I think that this is undoubtedly *A. metallica*, at least as interpreted by F. Smith, who states that it comes from Colombia. It accords exactly with my notes and recollection of Smith's specimens in the British museum. It is very close to the Brazilian *A. iheringi* Ckll., but has the abdomen green right across the segments, except the black hind margins. The first r. n. enters the apex of second s. m. or

joins second t. c.; in *A. feronia* Sm. it enters the base of third s. m. The wings are conspicuously dusky.

Two males from Guayaquil, May-June, 1913 (*Brues*), are referred here, in spite of the fact that they have the punctures of mesothorax, and scutellum less crowded and more distinct, the striæ at base of metathorax coarser and less numerous, and the tegulæ reddish instead of piceous. I should have thought them to belong to a distinct though very closely allied species, had I not previously found somewhat similar sexual differences in *A. quiriguensis* Ckll. The labrum, anterior edge of clypeus and nearly all of mandibles are cream-color. The tarsi are dark.

Augochlora vesta Smith.

Guayaquil (*v. Buchwald*; Alfken coll. 19, 20).

After I had determined this as *vesta*, I found that one of the specimens carried a label with the same determination made by Alfken. These specimens are true *A. vesta*, with golden-green head and thorax. A female taken by Brues at Guayaquil, May-June, 1913, has the head and thorax blue-green, and the first abdominal segment largely brassy though with red tints, but green at base and sides. I cannot separate this from a female from Villa Encarnacion, Paraguay, sent by Schrottky as *A. vesta* var. *cupreola* Ckll. A cotype of the real *cupreola*, from Chapada, is larger and has the punctures on posterior middle of mesothorax widely separated, and is obviously a different species. It seems probable that the form of *A. vesta* represented by the Brues and Schrottky specimens just cited should be called var. *terpsichore* (Holmberg). Schrottky treats *A. terpsichore* as a synonym of *A. cupreola*.

Augochlora thalia Smith.

Guayaquil, May-June, 1913, 3 males (*Brues*).

These specimens do not appear to differ from the Brazilian *A. thalia*.

Augochlora cladopyga new species.

Male.—Length about $5\frac{1}{2}$ mm., anterior wing 4; brassy green, with thin white pubescence; head broad, eyes very deeply emarginate; front minutely granular, dull; face shining emerald green, contrasting with the golden-green clypeus, the lower margin of which is broadly very pale yellow; mandibles

(except rufous apex) and labrum pale yellow; lower part of cheeks (beneath) shining golden-green, with slight coppery tints; antennæ long, black basally; flagellum pale testaceous beneath except at extreme base; fourth antennal joint broader than long; lateral angles of prothorax not very prominent; mesothorax moderately shining, minutely sculptured; scutellum more shining; area of metathorax large, at least as long as scutellum, rough, with indistinct oblique striæ; tegulæ rufotestaceous; wings dusky hyaline, stigma (which is large) and nervures red-brown; second s. m. extremely small and narrow, first r. n. meeting second t. c.; femora yellowish-green; knees and ends of tibiæ clear ferruginous, but greater part of tibiæ fuscous; tarsi pale testaceous or almost whitish, darkened apically; abdomen elongate, narrow, subclavate, with thin hoary pubescence; no vibrissæ; venter dark reddish brown, not metallic, the hind margins of segments whitish.

Habitat.—Guayaquil, May–June, 1913 (*Brues*).

Closely allied to *A. seminigra* Ckll., but readily separated by the greener abdomen, paler flagellum, etc. In Vachal's table (*Misc. Ent.*) it runs to *A. brochidens* Vach. from the Argentine Republic, but is not identical.

Augochlora notophos (Vachal) var. *nothus* new variety.

Guayaquil (*v. Buchwald*). Alfken coll. 22. The two male specimens before me represent a species very close to *A. notophos* Ckll., but distinct. They run in Vachal's table to *A. notophos*, and are provisionally referred to that species as a variety. Vachal, in describing the female of *notophos*, stated that he had no less than 32 specimens, from British Guiana, various parts of Brazil, Bolivia and Peru. He also had seven males, from Brazil and Peru. It seems unlikely that such a widespread and apparently common species should not have been earlier described; and when we look in the Brazilian fauna for a species agreeing essentially with *notophos*, we find *A. diversipennis* (Lep.), which Vachal did not include in his tables and evidently did not recognize. However, a single female *notophos* which Vachal loaned me years ago seemed nearest to *A. acidalia*, though quite distinct. It may well be that Vachal's *notophos* was composite, and was at least largely founded on *diversipennis*. The Guayaquil bees are quite of the type of male *diversipennis*, differing by the dark ferruginous (instead of yellow) tarsi, the paler vibrissæ of first two abdominal segments, and the anterior margin of clypeus narrowly dark reddish. The thickened hind margin of metathoracic enclosure is angulate or bracket-like, whereas in *diversipennis* it is evenly rounded.

From *A. notophos* the Guayaquil bees differ as follows: mandibles red, with a green basal spot; third antennal joint dull ferruginous; disc of mesothorax more closely punctured, green or golden-green, with no dark area; scutellum with golden tints; area of metathorax conspicuously angulate behind; tarsi ferruginous.

If my suspicion that typical *notophos* is *diversipennis* proves correct, the present insect will stand as a distinct species, *A. (Augochloropsis) nothus* Ckll.

***Augochlora matucanensis* new species.**

Female.—Length about 7 mm., anterior wing 6; brilliant yellowish-green, front and sides of face more blue green, contrasting with the golden-green clypeus and supraclypeal area; pubescence scanty, very pale brownish; head very large; clypeus strongly, not very densely, punctured, the lower margin black; mandibles black with a small green basal spot and the apex broadly dark red; labrum broad, not bidentate or emarginate; flagellum dusky testaceous beneath; ocelli small, close together; eyes deeply emarginate; front and vertex minutely, densely, granular-punctate; occipital margin with a sharp border; vertex and checks very large; checks obtusely angular below and behind; distance from top of eye to occipital margin nearly as great as to antenna; angles of prothorax well-marked; mesothorax and scutellum brilliantly shining, with extremely fine punctures, close even on posterior middle of mesothorax; pleura closely punctured; area of metathorax not defined, marked by fine oblique striæ, some of which become transverse in the middle, but the apical part is broadly smooth and shining, with no sharp or distinct rim; tegulæ rufopiceous; wings reddish dusky, stigma and nervures dull pale reddish; first r. n. entering basal corner of third s. m. or meeting second t. c.; legs piceous, with pale hair, anterior femora green beneath; hind spur simple; abdomen shining yellowish-green, very finely punctured, hind margins of segments not darkened or vibrissate.

Habitat.—Matucana, Peru (type locality), 4 females, June–July, 1913, 7,300 ft. (*Brucs*).

Also one from foothills near Lima, Peru, at flowers of *Heliotropium*, Dec. 5 (*C. H. T. Townsend*). In Vachal's table (*Misc. Ent.*) this runs out at 61 (p. 48). I cannot identify it with any species described from Peru, Brazil, etc. It is readily known by the shape of the head and the sculpture of the metathorax, but the head varies in size.

The above species of *Augochlora* may be readily separated as follows:

| | |
|---|-------------------------------------|
| Abdomen red or with strong red tints | 1 |
| Abdomen not red | 2 |
| 1. Thorax with golden or coppery tints | <i>vesta</i> Sm. |
| Thorax entirely bright bluish-green | <i>vesta terpsichore</i> (Holmbg.). |
| 2. Tibiæ and tarsi entirely clear red (males) | <i>thalia</i> Sm. |
| At least tibiæ partly dusky or dark | 3 |
| 3. Hind margins of abdominal segments broadly black | 4 |
| Hind margins of abdominal segments not black | 5 |
| 4. Larger; hind spur of female pectinate | <i>binghami</i> Ckll. |
| Smaller; hind spur of female not pectinate | <i>metallica</i> (Fabr.). |
| 5. Very small male; hind tibiæ red at base and apex; abdomen narrow, subclavate | <i>cladopyga</i> Ckll. |
| Larger, length about 7 mm., or rather more; abdomen not subclavate... | 6 |
| 6. Punctures of mesothorax large | <i>nothus</i> Ckll. |
| Punctures of mesothorax minute | <i>matucanensis</i> Ckll. |

Lonchopria inca new species.

Male.—Length 10½–11 mm.; black, with abundant long hair, which is dull white and black (the general effect grey), pale orange on inner side of tarsi; hair of face and cheeks long and white, white also on middle of vertex, but a little black at sides of face, more at sides of front, and upper part of front and most of vertex with black hair; thorax with dull white hair, mostly black on disc of mesothorax and scutellum, black also on mesopleura; hair of legs mainly pale, but black on outer side of tibiæ; hind tibiæ with very long erect silvery hairs in front, hind basitarsi with extremely long hairs in front and behind; hind femora with black hair in front; abdomen with long loose white hair on first three segments, on third with black subapically, and a narrow pure-white marginal band, interrupted in middle; fourth and fifth segments also with narrow white hair-bands, but the erect hair on fourth white basally and otherwise black, that on fifth and sixth black, fifth with long spreading white hairs at sides; head broad, vertex strongly depressed on each side of ocelli; antennæ black, rather long; mandibles simple, broad at end, the apex red; malar space rather large, but shorter than broad; mesothorax and scutellum smooth and shining, with scattered extremely minute punctures; tegulæ piceous; wings faintly dusky, nervures piceous, the narrow stigma rufous bordered with piceous; second s. m. broad, receiving first r. n. in middle; third t. c. much bowed outwards; b. n. falling far short of t. m.; area of metathorax large, triangular, dull at sides, shining in middle; abdomen shining, with perhaps a very faint greenish tint.

Habitat.—Two males, Matucana, Peru, June–July, 1913 (*Brues*).

In Friese's table this runs out, because the thoracic hair is mixed white and black. Our insect is really close to *L. rubriventris* (Friese), which it much resembles, differing in the larger size, long hair on hind legs, much larger area of metathorax, etc. In *L. inca*

the inner orbits strongly converge below, which is not the case in *rubriventris*, but they agree in the simple mandibles. The mandibles of male *L. chalybæa* (Friese) are strongly bidentate, while those of *L. thoracica* (Friese) are as strongly tridentate. In *L. thoracica* the b. n. almost meets the t. m. Friese, in describing his genus *Biglossa* (= *Lonchopria*), did not indicate a type. His first species, *thoracica*, is hereby designated the type of *Biglossa*.

Colletes miminca new species.

Male.—Length about $10\frac{1}{2}$ mm.; black, head and thorax with abundant long black and white hair; clear white on face (some black at extreme sides) and cheeks, nearly all black on front and vertex, white on occiput; on thorax above the hair is mixed black and white, the effect being rather dark grey, on pleura it is largely black; the legs have pale hair, light ochreous on inner side of tarsi; the abdomen has long greyish-white hair on the first segment, the other segments are rather thinly covered with short, easily abraded, pale ochreous furfuraceous pubescence, and have in addition thin long hair, only clearly visible in lateral view, this hair being white at the base of the second, and slightly on the bases of the third and fourth segments, but otherwise black; extreme apex with fuscous hair; no hair-bands; head very broad; eyes prominent; antennæ black, third joint shorter than fourth, fourth shorter than fifth; joints of middle of flagellum much longer than broad; clypeus with a shallow median sulcus; mandibles bidentate, rufous at extreme tip; labrum with three strong pits or grooves; malar space extremely long, more than twice as long as its apical breadth, its length about equal to distance from notch to base of mandible; prothoracic spines not evident; mesothorax and scutellum shining, with numerous small punctures; area of metothorax with very numerous vertical ridges; hind basitarsi broadened, rather hollowed on inner side; tegulæ piceous; wings dusky hyaline; stigma small, dark rufous, nervures piceous; second s. m. very large, receiving first r. n. a little beyond middle; b. n. falling a short distance short of t. m.; abdomen very finely punctured; stipites very broad; sagittæ divergent apically; hind margins of ventral abdominal segments with narrow dense pale hair-bands.

Habitat.—Two males, Matucana, Peru, June–July, 1913 (*Brues*).

Superficially, this is exactly like *Lonchopria inca*. Although the abdomen is not really banded, when worn it seems to be so, owing to the furfuraceous pubescence remaining in the apical depressions of the segments. The species belongs to the *C. lycii* group, and has some affinity with *C. peruvicus* Ckll., but is much larger, with longer malar space, etc. In Swenk's table of North American *Colletes* (1908) it falls closest to *C. intermixtus*.